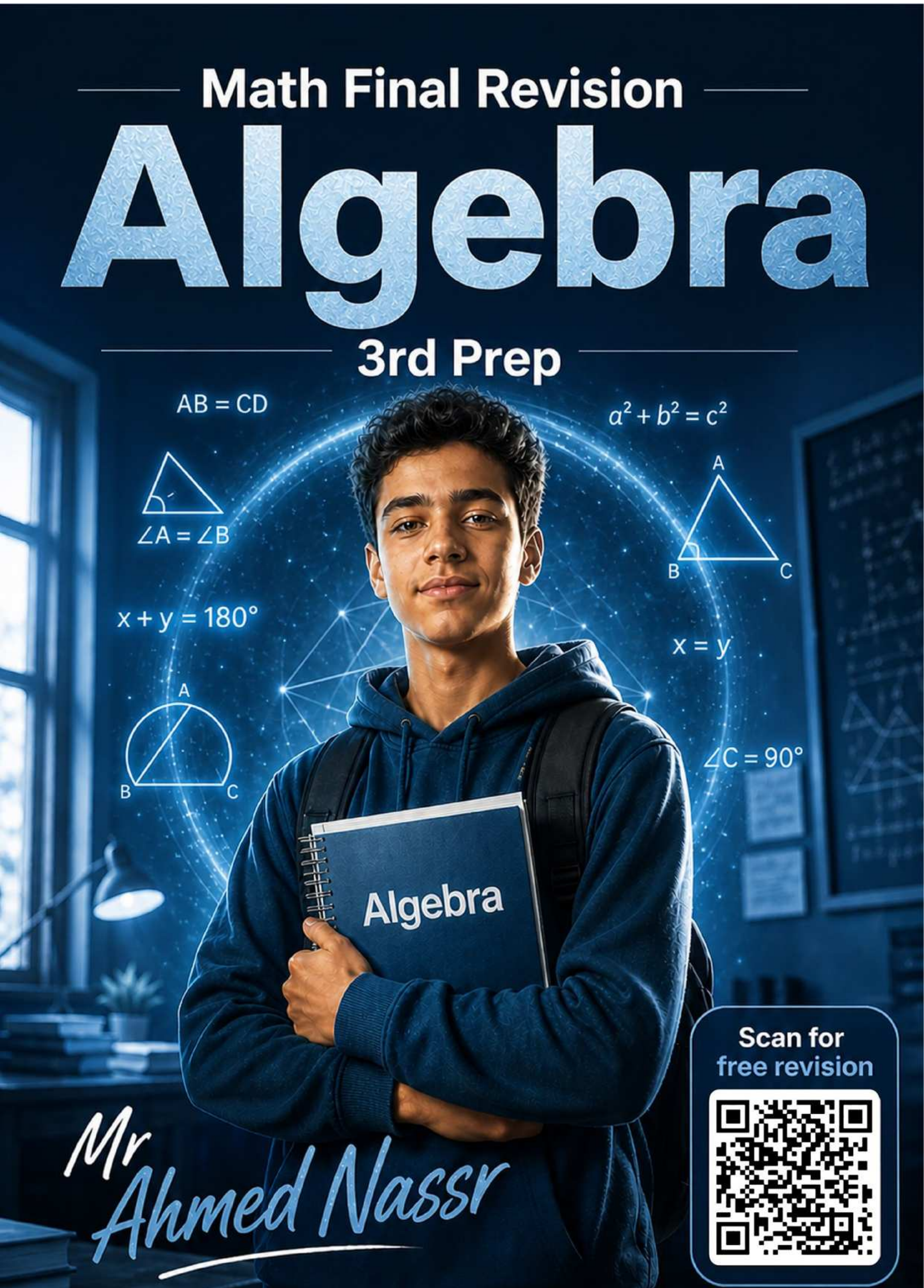

Math Final Revision
Algebra
3rd Prep
AB = CD
$a^2 + b^2 = c^2$
∠A = ∠B
A
B
C
x + y = 180°
x = y
A
B
C
∠C = 90°
Algebra
Mr
Ahmed Nassr
Scan for
free revision

First Algebra

Q1: Choose the correct answer

1. The point of intersection of the two straight lines: $x + 3 = 0$ and $y = 5$ is ....

(a) (3 , 5) (b) (−3 , 5) (c) (−3 , −5) (d) (3 , −5)

2. The point of intersection of the two straight lines : $x + 2 = 0$, $y = x$ is ....

(a) (2 , 2) (b) (2 , 0) (c) (−2 , −2) (d) (0 , 0)

3. The S.S of the two equations: $x - 2y = 1$, $3x + y = 10$ in R × R is ....

(a) {(5 , 2)} (b) {(2 , 4)} (c) {(1 , 3)} (d) {(3 , 1)}

4. The number of solutions of the equation : $y - 2 =$ zero in R x R is ....

(a) 0 (b) 1 (c) 2 (d) infinite

5. The ordered pair which satisfies each of the two equations: $xy = 2$, $x - y = 1$ is ....

(a) (1 , 1) (b) (2 , 1) (c) (1 , 2) (d) $(\frac{1}{2}, 1)$

6. The number of solutions of the two equations: $x + y = 2$, $2y + 2x = 5$ in R × R is ....

(a) 0 (b) 1 (c) 2 (d) infinite

7. The S.S of the two equations : $x - y = 0$, $xy = 9$ in R × R is ....

(a) {(0 , 0)} (b) {(−3 , 3)} (c) {(3 , 3)} (d) {(−3 , −3) , (3 , 3)}

8. The two straight lines: $x + y = 5$, $2x + 2y = 7$ are ....

(a) parallel (b) coincident
(c) intersecting and not perpendicular (d) perpendicular

9 The two straight lines: $3x = 7$, $2y = 9$ are ....

(a) parallel (b) coincident
(c) intersecting and not perpendicular (d) perpendicular

10 The number of solutions of the two equations : $x + 2y = 5$, $x - 2y = -1$ in $R \times R$ is ....

(a) 0 (b) 1 (c) 2 (d) infinite

11 If $ab = 3$, $ab^2 = 12$, then $b =$ ....

(a) 4 (b) 2 (c) -2 (d) ± 2

12 One of the solutions of the two equations: $x - y = 2$, $x^2 + y^2 = 20$ in $R \times R$ is ....

(a) (1 , 3) (b) (2 , 0) (c) (4 , 2) (d) (−4 , 2)

13 If the S.S of the equation: $x^2 - ax + 4 = 0$ in R is {2}, then $a =$ ....

(a) -4 (b) 2 (c) -2 (d) 4

14 The solution set of the two equations: $x + y = 0$ and $y - 5 = 0$ in R x R is ....

(a) {(−5 , 5)} (b) {(5 , −5)} (c) {(5 , 5)} (d) {(−5 , −5)}

15 If the two straight lines : $x - 3y = 2$, $x + ky = 5$ are parallel, then $k =$ ....

(a) 2 (b) 5 (c) -3 (d) 3

16 If there are an infinite number of solutions of the two equations: $x + 4y = 7$, $3x + ky = 21$, then $k =$ ....

(a) 4 (b) 7 (c) 12 (d) 21

17 The number of solutions of the two equations: $x + 2y = 3$, $2x + 4y + 6 = 0$ in $R \times R$ is ....

(a) a unique solution (b) two solutions
(c) an infinite number of solutions (d) zero

18 The two straight lines : $x + 3y = 4$, $3y + x = 1$ are ....

(a) parallel
(b) coincident
(c) intersecting and not perpendicular
(d) perpendicular

19 If the two straight lines representing the two equations : $x + 3y = 4$, $x + ay = 7$ are parallel, then a = ...

(a) 3
(b) 4
(c) 7
(d) 11

20 If the two equations $2x + 3y = 7$, $4x + ky = 14$ has infinite number of solutions in R × R, then k = ...

(a) 7
(b) 4
(c) 6
(d) 21

21 In the equation: $ax^2 + bx + c = 0$ where $a \neq 0$. If $b^2 - 4ac < 0$ then number of the equation roots in R = ...

(a) 0
(b) 1
(c) 2
(d) infinite number

22 In the equation: $ax^2 + bx + c = 0$ where $a \neq 0$, if $b^2 - 4ac > 0$, then this equation has .... roots in R.

(a) 1
(b) 2
(c) zero
(d) an infinite number

23 If $x = 3$ is one of the solutions of the equation: $x^2 - ax - 6 = 0$, then a = ...

(a) 1
(b) 2
(c) 3
(d) −1

24 The two straight lines: $3x + 5y = 0$, $5x - 3y = 0$ are intersecting at ....

(a) the origin point
(b) the fourth quadrant
(c) the first quadrant
(d) an infinite number of solution

25 The number of solutions of a 1st degree equation in two variables equals .... of solutions

(a) Zero
(b) 1
(c) 3
(d) Infinite

26 The solution set of the two equations: $x + 3y = 4$, $3y + x = 1$ in $R \times R$ is ....

(a) $\varnothing$ (b) $\{(1, 1)\}$ (c) $\{(0, \frac{1}{3})\}$ (d) $\{(0, 0)\}$

27 The two straight lines: $x - 3 = 0$, $y = 4$ are intersecting in the .... quadrant.

(a) first (b) second (c) third (d) fourth

28 The number of solutions of the two equations: $x + y = 2$, $y + x = 3$ in $R \times R$ is ....

(a) 0 (b) 1 (c) 2 (d) 3

29 If the two equations $3x + 2y = 9$, $6x + ky = 18$ has infinite number of solutions in $R \times R$, then $k = ...$

(a) 6 (b) 4 (c) 8 (d) 7

30 If the curve of the quadratic function f touch the x-axis at the point $(k + 1, k - 2)$, then $k = ...$

(a) 0 (b) 1 (c) 2 (d) 3

31 In the equation: $ax^2 + bx + c = 0$ where $a \neq 0$. If $b^2 - 4ac = 0$ then number of the equation roots in R = ...

(a) 0 (b) 1 (c) 2 (d) infinite number

32 If the curve of the quadratic function f passes through the points $(-1, 0)$, $(0, -4)$ and $(4, 0)$, then the solution set of the equation $f(x) = 0$ in R is ....

(a) $\{-1, 0\}$ (b) $\{-4, 0\}$ (c) $\{-1, 4\}$ (d) $\{4, -4\}$

33 The solution set of the two equations $x - y = 0$, $xy = 4$ in RR is ....

(a) $\{(2, 2)\}$ (b) $\{(-2, 2)\}$ (c) $\{(0, 0)\}$ (d) $\{(-2, -2), (2, 2)\}$

From confusion to clarity

Follow for More!

Q2: Answer The Following

1 Find the values of a and b, noting that: (3, - 1) A solution to the two equations:
$ax + by = 5$, $3ax + by = 17$

2 A rectangle whose length exceeds its width by 4 cm, if the perimeter of the rectangle is 28 cm. Find the area of the rectangle.

3 Find in R × R the solution set of the following two equations algebraically: $x - y = 0$, $x^2 + xy + y^2 = 27$

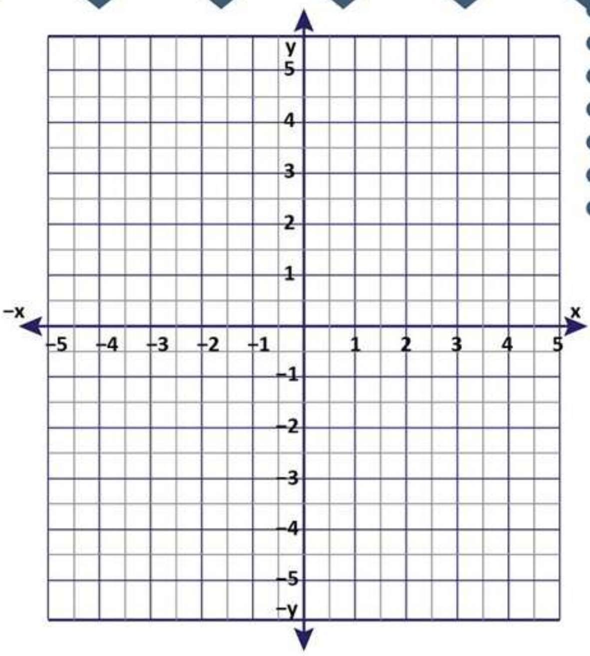
4 Two acute angles in a right-angled triangle, the difference between their measures is 50°, Find the measure of each angle

5 Graph the function f: $f(x)=x^2 - 4x + 3$ in the interval [−1 , 5] and from the graph, find :

ⓐ The minimum value of the function.

ⓑ The equation of the axis of symmetry

ⓒ The S.S of the equation $f(x) = 0$



6 Find in R × R the solution set of the following two equations algebraically:

$x - y = 2$, $x^2 + y^2 = 34$

7 If the curve of the quadratic function f passes through the points (-1, 0) ,(0, -4) and (4, 0) find the solution set of the equation: $f(x) = 0$

8 Find in R the solution set of the following equation using the general rule:

$3x^2 + 1 = 6x$ (Approximating the result to one decimal place) .

9 A right-angled triangle of hypotenuse length 13 cm, and its perimeter is 30 cm. Find the lengths of the other two side

10 Find in R the S.S of equation using the general formula:
$x(x - 1) = 4$ in R "to the nearest one decimal place"

11 Find in R × R the solution set of the two equations: $2x - y = 3$, $x + 2y = 4$

12 Find in R×R the solution set of the two equations: $y + 2x = 0$, $xy = 8$

13 Find in R the S.S of equation using the general formula: $x^2 - 2x - 6 = 0$ in R
"to the nearest one decimal place"

14 Find in R the solution set of the following equation using the general rule:
$x^2 - 5x = -2$ (Approximating the result to two decimal places)

15 Two positive real numbers the difference between them is 6 and the product is 16.
Find the two numbers

16 A two–digit number its units digit twice the tens digit. If the product of its digits equals half of the original number, what is the number?

17 Find in R the S.S of equation using the general formula: $x^2 + 3x - 3 = 0$ in R
"to the nearest one decimal place"

18 Find in R × R the solution set of the following two equations: $x + y = 5$, $x^2 + y^2 = 13$

19 Two real numbers their sum is 10 and the difference between their squares is 40. Find the two numbers.

20 Find in R the S.S of each equation using the general formula: $x^2 - x = 4$ in R "to the nearest one decimal place"

21 The sum of two real numbers is 9 and the difference between their squares equals 45. Find the two numbers.

Q1: Choose the correct answer

1 The set of zeroes of the function f: $f(x) = -3x$ is ....

(a) {0} (b) {−3} (c) {−3 , 0} (d) R

2 The set of zeroes of the function f: $f(x)$ = zero is ....

(a) $\varnothing$ (b) R − {0} (c) { 0} (d) R

3 If $z(f) = \{2\}$, $f(x) = x^3 - m$, then m = ...

(a) $\sqrt[3]{2}$ (b) 2 (c) 4 (d) 8

4 The set of zeroes of the function f: $f(x) = \frac{2-x}{7}$ is ....

(a) $\varnothing$ (b) {2} (c) {2 , 7} (d) {7}

5 The set of zeroes of the function f: $f(x) = \frac{x^2-9}{x-2}$ is ....

(a) {2} (b) R − {2} (c) {3 , −3} (d) {3 , −3, 2}

6 If x = 3 is one of the zeroes of the function f: $f(x) = \frac{x^2-2x+k}{x^2-25}$, then k = ...

(a) 3 (b) 6 (c) −3 (d) −6

7 The common domain of the two fraction $\frac{2}{x^2-1}$, $\frac{5x}{x^2-x}$ is ....

(a) R − {1} (b) R − {0 , 1} (c) R − {0 , 1 , −1} (d) R − {1 , −1}

8 The common domain of the two fraction $\frac{2x}{x-3}$, $\frac{x}{x+5}$ is ....

(a) {3 , −5} (b) R − {0 , 3 , −5} (c) R − {3 , −5} (d) R

9 The set of zeroes of the function f: $f(x) = x^2 + 1$ is ....

(a) $\varnothing$ (b) {−1} (c) {−1 , 1} (d) {0}

From confusion to clarity

Follow for More!

10 The domain of the function $f: f(x) = \frac{x-7}{3(x-3)}$ is ....

ⓐ $R - \{-1\}$ ⓑ $R - \{3\}$ ⓒ $R - \{-1, 3\}$ ⓓ R

11 The common domain of the two fraction $\frac{x}{x+1}$, $\frac{x+2}{x^2+4}$ is ....

ⓐ $\{-1\}$ ⓑ $\{-1, -4\}$ ⓒ $R - \{-1\}$ ⓓ $\{-1, 2, -2\}$

12 If $x \neq 0$, then $\frac{5x}{x^2+1} \div \frac{x}{x^2+1}$ = ...

ⓐ 1 ⓑ −1 ⓒ −5 ⓓ 5

13 If {2} is the set of zeroes of the function $f: f(x) = x^3 - m$, then m = ...

ⓐ 8 ⓑ 6 ⓒ 4 ⓓ 2

14 If $n(x) = \frac{x}{x^2+9}$, then the domain of n^{-1} is ....

ⓐ Ø ⓑ $R - \{-3, 3, 0\}$ ⓒ R ⓓ $R - \{0\}$

15 If $n(x) = \frac{x^2-2x}{(x-2)(x^2+2)}$, then the domain of n^{-1} is ....

ⓐ R ⓑ $R - \{2\}$ ⓒ $R - \{0, 2\}$ ⓓ $R - \{0\}$

16 The domain of the multiplicative inverse of the algebraic fraction $\frac{x-2}{x^3+27}$ is ....

ⓐ $R - \{2\}$ ⓑ $R - \{-3, 2\}$ ⓒ $R - \{2, -3, 3\}$ ⓓ $R - \{-3, 3\}$

17 If $x \in R - \{0, 1\}$, then $\frac{1-x}{x} \div \frac{x-1}{x}$ in simplest form is ....

ⓐ 1 ⓑ −1 ⓒ $x - 1$ ⓓ x

18 If $n_1(x) = \frac{x^2-4}{x-3}$, $n_2(x) = x + 3$, then $n_1 = n_2$ when they have the same domain which is ....

ⓐ R ⓑ $R - \{3\}$ ⓒ $R - \{-3\}$ ⓓ $R - \{1\}$

19 The algebraic fraction $\frac{1}{x}$ equals the algebraic fraction .... where $x \neq 0$

ⓐ $\frac{x}{x^2}$ ⓑ $\frac{1}{x^2}$ ⓒ $\frac{x}{2}$ ⓓ $\frac{x+1}{x}$

20 The set of zeroes of the function f where $f(x) = x(x^2 - 2x + 1)$ is ....

ⓐ {0 , 1} ⓑ {0 , −1} ⓒ {0} ⓓ {1}

21 The additive inverse of the algebraic fraction $\frac{2}{x-1}$ is .... , where $x \neq 0$

ⓐ $\frac{-2}{x+1}$ ⓑ $\frac{x-1}{2}$ ⓒ $\frac{2}{1-x}$ ⓓ $\frac{-2}{-x+1}$

22 The set of zeroes of the function f: $f(x) = x^2 + 25$ is ....

ⓐ ∅ ⓑ {5} ⓒ {5 , −5} ⓓ R

23 The set of zeroes of f where $f(x) = \frac{x^2 - 3x + 2}{x - 2}$ is ....

ⓐ {2} ⓑ {1} ⓒ R − {2} ⓓ {1 , 2}

24 If: 3 is one of the zeros of the function $f(x) = x^2 - 3x + m$, then m is ....

ⓐ 0 ⓑ 6 ⓒ 3 ⓓ −6

25 The additive inverse of the fraction $\frac{x+1}{x-5}$ is ....

ⓐ $\frac{x+1}{5-x}$ ⓑ $\frac{1-x}{x-5}$ ⓒ $\frac{1-x}{5-x}$ ⓓ $\frac{1-x}{x+5}$

26 If $n(x) = \frac{1}{(x^2-4)^2}$, then the domain of n^{-1} is ....

ⓐ R − {1 , 4} ⓑ R − {2 , −2} ⓒ R − {1} ⓓ R

27 If $n(x) = \frac{x-2}{x+1}$, then the domain of n^{-1} is ....

ⓐ R − {−1} ⓑ R − {2} ⓒ R − {1 , −2} ⓓ R − { −1 , 2}

From confusion to clarity

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Q2: Answer The Following

1 If the set of zeroes of the function $f: f(x) = \frac{x^2 - ax + 16}{x + b}$, is {4} and its domain is R – {2}, find the value of each of a and b

2 Find n(x) in the simplest form, showing the domain of n where:

$n(x) = \frac{3x}{x^2 - x - 2} + \frac{x - 1}{1 - x^2}$

3 If $n_1(x) = \frac{2x}{2x + 8}$, $n_2(x) = \frac{x^2 + 4x}{x^2 + 8x + 16}$, prove that: $n_1 = n_2$

4 If the set of zeroes of the function $f: f(x) = \frac{x^2 - ax + 9}{bx + 4}$, is {3} and its domain is R – {2}

Find: the value of each of a and b

From confusion to clarity

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5 If $n(x) = \frac{x^2 + cx + 12}{x^2 + 3x + a}$, the domain of n = R − { 3 , b }, n(4) = 6
Find the values of a, b and c

6 Find n (x) in the simplest form, showing the domain of n:
$n(x) = \frac{x^3 - 8}{x^2 + x - 6} \div \frac{x^2 + 2x + 4}{x + 3}$

7 Find in the simplest form, showing the domain: $n(x) = \frac{x^3 - 8}{x^2 - 9} \times \frac{x + 3}{x^2 + 2x + 4}$

8 Find n(x) in the simplest form, showing the domain of n where:
$n(x) = \frac{3x - 6}{x^2 - 4} - \frac{9}{2 - x - x^2}$, Find: n(1) if possible.

9 Find in the simplest form, showing the domain: $n(x) = \frac{x^2 + 2x + 4}{x^3 - 8} + \frac{x^2 - 2x - 3}{x^2 - 5x + 6}$

10 Find n(x) in the simplest form, showing the domain where:

$n(x) = \frac{x^2 - 4}{x^2 - 5x + 6} - \frac{5}{x - 3}$

11 Find n (x) in its simplest form, showing the domain of n where :

$n(x) = \frac{x^2 + 2x}{x^3 - 27} \div \frac{x + 2}{x^2 + 3x + 9}$

12 If f: $f(x) = \frac{x^2 + k}{x^2 - mx + 6}$, its domain is R – { 2 , 3} , $f(4) = 9$,

Find: m, k

13 If the domain of $n(x) = \frac{b}{x} + \frac{9}{x+a}$, R − {0 , 4}, n(5) = 2.

Find the value of a and b

14 If $n(x) = \frac{x^2 - 5x}{x^2 - 6x + 5}$, find n_1 (x) in the simplest form, showing the domain of n^{-1}

15 Find n (x) in the simplest form, showing the domain of n :

$$n(x) = \frac{2x + 6}{x^2 + x - 6} - \frac{x^2 - 6x}{x^2 - 8x + 12}$$

16 Find in the simplest form, showing the domain: $n(x) = \frac{x^2 - x - 6}{x^2 - 4} \times \frac{x^2 - 2x}{x - 3}$

From confusion to clarity

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17 If $n_1(x) = \frac{x^2 - 4}{x^2 + x - 6}$, $n_2(x) = \frac{x^2 - x - 6}{x^2 - 9}$ are $n_1 = n_2$ or not why?

18 If the domain of the function n where $n(x) = \frac{x - 1}{x^2 - ax + 9}$ is R – {3} find the value of a

19 If $n(x) = \frac{x + 2}{x^2 - x - 6}$, find $n^{-1}(x)$ in the simplest form showing its domain.

Find: $n^{-1}(x) = 2$, what is the value of x

20 Find n(x) in the simplest form, showing the domain of n where:

$n(x)= \frac{x - 3}{x^2 - 7x + 12} - \frac{x - 3}{3 - x}$

21 Find in the simplest form, showing the domain: $n(x) = \frac{x^2 - 12x + 36}{x^2 - 6x} \times \frac{4x + 24}{x^2 - 36}$

22 Find in the simplest form, showing the domain: $n(x) = \frac{x^2 - 3x + 2}{x^2 - 1} \div \frac{3x - 15}{x^2 - 6x + 5}$

23 If $n(x) = \frac{x^2 + 4x + 3}{x^3 + 27}$, find $n^{-1}(x)$ in the simplest form showing its domain.

Q1: Choose the correct answer

1 If A , B are two mutually exclusive events from the sample space of a random experiment, then P (A ∩ B) = ...

(a) zero (b) 1 (c) $\frac{1}{2}$ (d) −1

2 If P(A) = 4 P(A\`), then P(A) = ...

(a) 0.6 (b) 0.4 (c) 0.2 (d) 0.8

3 If A ⊂ B, then P(A ∪ B) = ...

(a) P(A) (b) P(B) (c) 1 (d) P(A∩B)

4 If A and B are two mutually exclusive events of a sample space of a random experiment, then P(A − B) = ...

(a) P(A) (b) P(B) (c) P(A\`) (d) P(B\`)

5 The probability of the certain event equals ....

(a) zero (b) 1 (c) $\frac{1}{2}$ (d) Ø

6 If A and B are two events from the sample space of a random experiment , P (A) = 0.6 and P (A ∩ B) = 0.4 , then P (A − B) = ...

(a) 0.6 (b) 0.4 (c) 0.2 (d) 0.1

7 If A is an event of the sample space (S) of a random experiment and P (A\`) = P (A), then P (A) = ...

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) 1

8 In an experiment of throwing a fair die once, the probability of appearing a prime number is ....

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) $\frac{3}{4}$

9 The probability of the impossible event is ....

(a) zero (b) 1 (c) $\frac{1}{2}$ (d) Ø

10 If a fair die is rolled once , then the probability of appearing a number less than or equal 3 equals ....

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) $\frac{1}{6}$

11 If A and B are two events of a sample space S, $A \subset B$, then $P(A \cup B)$ = ...

(a) P(A) (b) P(B) (c) $P(A \cap B)$ (d) 0

12 If $\grave{A}$ is the complementary event of A in the sample space of a random experiment, Then $P(\grave{A} \cup A)$ = ...

(a) S (b) 1 (c) $\frac{1}{2}$ (d) Ø

13 If the probability of the failure of a student is 0.2, then the probability of his success is ....

(a) 8 (b) 1 (c) $\frac{1}{5}$ (d) $\frac{4}{5}$

14 If $A \subset B$, then $P(A - B)$ = ...

(a) P(A) (b) P(B) (c) zero (d) 1

15 If $A \subset S$ of a random experiment and $P(\grave{A}) = 2P(A)$, then P (A) = ...

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) 1

From confusion to clarity
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16 If A is an event from the sample space of a random experiment, then P(A\`) = ...

ⓐ $P(A) - 1$ ⓑ $1 - P(A)$ ⓒ -1 ⓓ 1

17 If $A \subset B$, then $P(A \cap B)$ = ...

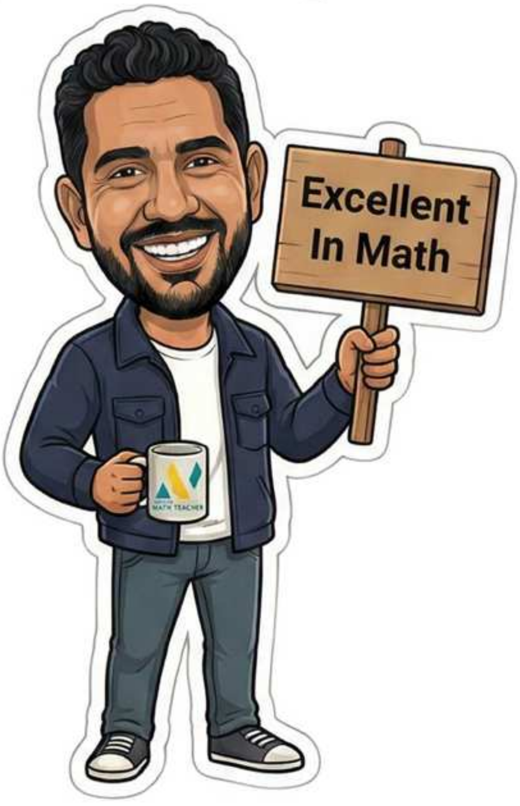
ⓐ P(A) ⓑ P(B) ⓒ zero ⓓ Ø

18 If A is an event from the sample space of a random experiment, and $P(A) = P(A')$, then P(A) = ...

ⓐ 1 ⓑ 0.25 ⓒ 0.5 ⓓ 2

19 If A is an event from the sample space of a random experiment, and $P(A) = 3P(A')$, then P(A) = ...

ⓐ $\frac{1}{4}$ ⓑ $\frac{3}{4}$ ⓒ $\frac{1}{2}$ ⓓ 1

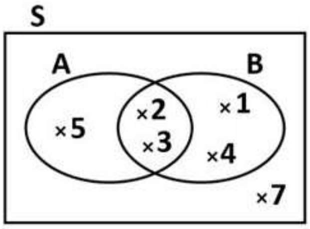


Q2: Answer The Following

1 If A , B are two events of the sample space of a random experiment and $P(A) = 0.3$,$P(B) = P(B')$, $P(A \cap B) = 0.2$

Find: (a) $P(A \cup B)$ (b) $P(A - B)$

2 If the opposite figure represents the two events A and B in the sample space (S) of a random experiment, Find:



(a) $P(A \cap B)$ (b) $P(A \cup B)$
(c) $P(A - B)$

3 If A , B are two events in the sample space of a random experiment:
$P(A) = 0.4$, $P(B) = 0.7$, $P(A \cup B) = 0.8$

Find: (a) $P(A \cap B)$ (b) $P(A - B)$

4 If A , B are two events of the sample space of a random experiment ,$P(A)= 0.8$, $P(B) = 0.7$, $P(A \cap B)= 0.6$

Find: (a) $P(A \cup B)$ (b) The probability of non occurrence of A

From confusion to clarity

Follow for More!

5 If A , B are two events of the sample space of a random experiment and $P(A) = \frac{1}{2}$, $P(B) = \frac{1}{3}$, Find $P(A \cup B)$ in each of the following two cases:

(a) If $P(A \cap B) = \frac{1}{8}$

(b) If A and B are two mutually exclusive events.

6 A bag contains 20 identical cards numbered from 1 to 20. A card is randomly drawn. Find the probability that the number on the drawn card is :

(a) divisible by 3

(b) divisible by 3 or 5

7 If A and B are two events of the sample space of a random experiment ,$P(A) = 0.3$, $P(B) = 0.6$, Find $P(A \cup B)$ in each of the following cases:

(a) A and B are mutually exclusive events

(b) $P(A \cap B) = 0.2$

8 If A and B are two events of the sample space of a random experiment ,$P(B) = \frac{1}{3}$, $P(A - B) = \frac{1}{4}$, Find P (A) if:

(a) $P(A \cap B) = \frac{1}{12}$

(b) $B \subset A$

From confusion to clarity

Follow for More!

9 If A and B are two events from the sample space of a random experiment, $P(A) = 0.5$, $P(A \cup B) = 0.8$ and $P(B) = 2x$, then calculate the value of x if :

(a) $A \subset C$

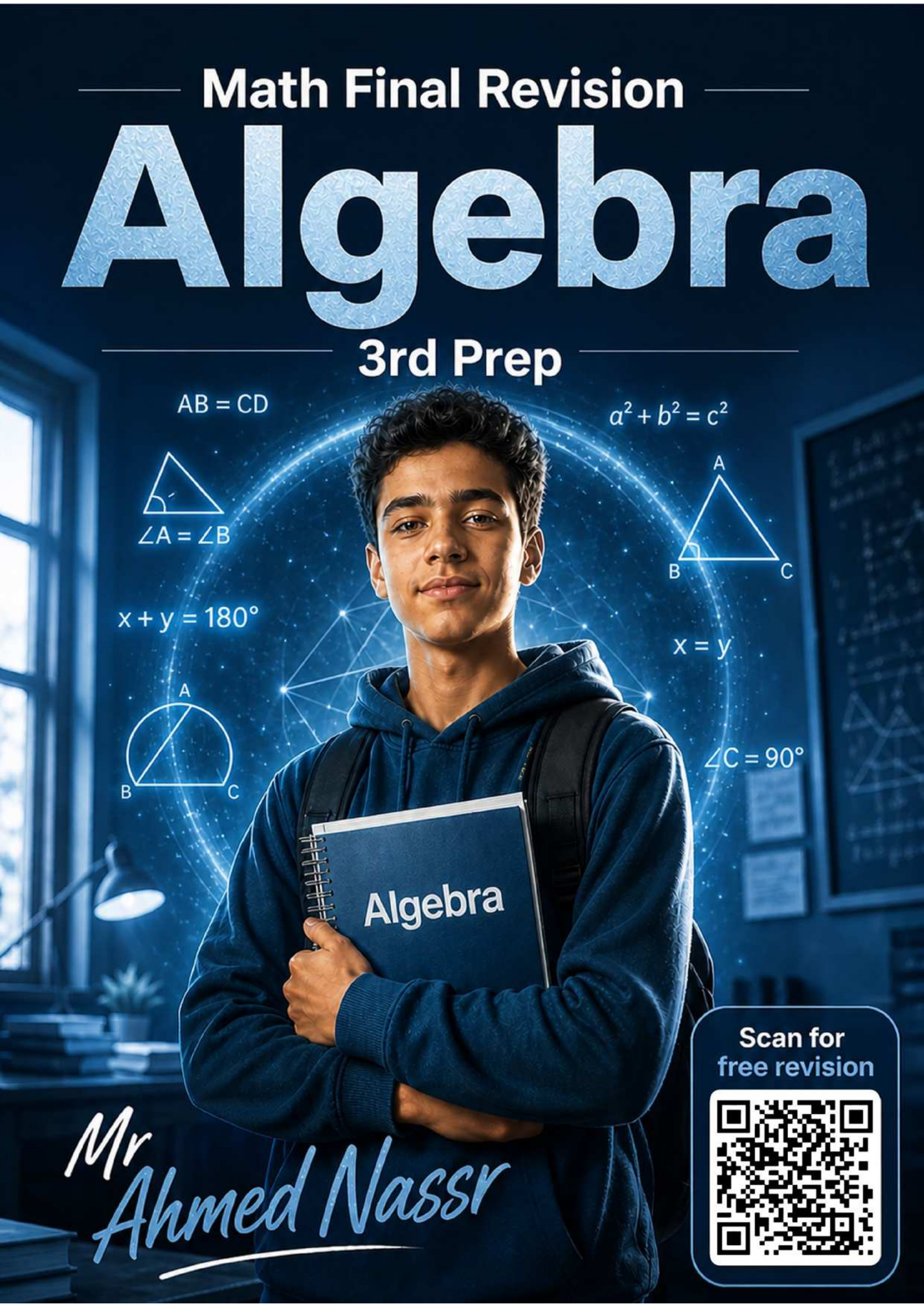
(b) $P(A \cap B) = 0.1$

10 A bag contains 20 identical cards numbered from 1 to 20. One card is drawn randomly. Find the probability that the number on the drawn card:

(a) Is divisible by 5

(b) Is odd and divisible by 5

11 If A and B are mutually exclusive events in the sample space of a random experiment and: $P(A) = 0.3$, $P(B) = 0.4$, find: $P(A \cup B)$, $P(A - B)$.


Math Final Revision
Algebra
3rd Prep
AB = CD
$a^2 + b^2 = c^2$
∠A = ∠B
A
B
C
x + y = 180°
x = y
A
B
C
∠C = 90°
Algebra
Scan for
free revision
Mr
Ahmed Nassr

First Algebra

Q1: Choose the correct answer

1. The point of intersection of the two straight lines: $x + 3 = 0$ and $y = 5$ is ....

(a) $(3, 5)$ (b) $(-3, 5)$ (c) $(-3, -5)$ (d) $(3, -5)$

2. The point of intersection of the two straight lines : $x + 2 = 0$, $y = x$ is ....

(a) $(2, 2)$ (b) $(2, 0)$ (c) $(-2, -2)$ (d) $(0, 0)$

3. The S.S of the two equations: $x - 2y = 1$, $3x + y = 10$ in $R \times R$ is ....

(a) $\{(5, 2)\}$ (b) $\{(2, 4)\}$ (c) $\{(1, 3)\}$ (d) $\{(3, 1)\}$

4. The number of solutions of the equation : $y - 2 =$ zero in $R \times R$ is ....

(a) 0 (b) 1 (c) 2 (d) infinite

5. The ordered pair which satisfies each of the two equations: $xy = 2$, $x - y = 1$ is ....

(a) $(1, 1)$ (b) $(2, 1)$ (c) $(1, 2)$ (d) $(\frac{1}{2}, 1)$

6. The number of solutions of the two equations: $x + y = 2$, $2y + 2x = 5$ in $R \times R$ is ....

(a) 0 (b) 1 (c) 2 (d) infinite

7. The S.S of the two equations : $x - y = 0$, $xy = 9$ in $R \times R$ is ....

(a) $\{(0, 0)\}$ (b) $\{(-3, 3)\}$ (c) $\{(3, 3)\}$ (d) $\{(-3, -3), (3, 3)\}$

8. The two straight lines: $x + y = 5$, $2x + 2y = 7$ are ....

(a) parallel (b) coincident
(c) intersecting and not perpendicular (d) perpendicular

From confusion to clarity

Follow for More!

9 The two straight lines: $3x = 7$, $2y = 9$ are ....

(a) parallel (b) coincident
(c) intersecting and not perpendicular **(d) perpendicular**

10 The number of solutions of the two equations : $x + 2y = 5$, $x - 2y = -1$ in $R \times R$ is ....

(a) 0 **(b) 1** (c) 2 (d) infinite

11 If $ab = 3$, $ab^2 = 12$, then $b =$ ....

(a) 4 (b) 2 (c) -2 (d) ± 2

12 One of the solutions of the two equations: $x - y = 2$, $x^2 + y^2 = 20$ in $R \times R$ is ....

(a) (1 , 3) (b) (2 , 0) **(c) (4 , 2)** (d) $(-4 , 2)$

13 If the S.S of the equation: $x^2 - ax + 4 = 0$ in R is {2}, then $a =$ ....

(a) -4 (b) 2 (c) -2 **(d) 4**

14 The solution set of the two equations: $x + y = 0$ and $y - 5 = 0$ in R x R is ....

(a) $\{(-5 , 5)\}$ (b) $\{(5 , -5)\}$ (c) $\{(5 , 5)\}$ (d) $\{(-5 , -5)\}$

15 If the two straight lines : $x - 3y = 2$, $x + ky = 5$ are parallel, then $k =$ ....

(a) 2 (b) 5 **(c) -3** (d) 3

16 If there are an infinite number of solutions of the two equations: $x + 4y = 7$, $3x + ky = 21$, then $k =$ ....

(a) 4 (b) 7 **(c) 12** (d) 21

17 The number of solutions of the two equations: $x + 2y = 3$, $2x + 4y + 6 = 0$ in $R \times R$ is ....

(a) a unique solution (b) two solutions
(c) an infinite number of solutions **(d) zero**

From confusion to clarity

Follow for More!

18 The two straight lines : $x + 3y = 4$, $3y + x = 1$ are ....

(a) parallel
(b) coincident
(c) intersecting and not perpendicular
(d) perpendicular

19 If the two straight lines representing the two equations : $x + 3y = 4$, $x + ay = 7$ are parallel, then a = ...

(a) 3
(b) 4
(c) 7
(d) 11

20 If the two equations $2x + 3y = 7$, $4x + ky = 14$ has infinite number of solutions in R × R, then k = ...

(a) 7
(b) 4
(c) 6
(d) 21

21 In the equation: $ax^2 + bx + c = 0$ where $a \neq 0$. If $b^2 - 4ac < 0$ then number of the equation roots in R = ...

(a) 0
(b) 1
(c) 2
(d) infinite number

22 In the equation: $ax^2 + bx + c = 0$ where $a \neq 0$, if $b^2 - 4ac > 0$, then this equation has .... roots in R.

(a) 1
(b) 2
(c) zero
(d) an infinite number

23 If x = 3 is one of the solutions of the equation: $x^2 - ax - 6 = 0$, then a = ...

(a) 1
(b) 2
(c) 3
(d) −1

24 The two straight lines: $3x + 5y = 0$, $5x - 3y = 0$ are intersecting at ....

(a) the origin point
(b) the fourth quadrant
(c) the first quadrant
(d) an infinite number of solution

25 The number of solutions of a 1st degree equation in two variables equals .... of solutions

(a) Zero
(b) 1
(c) 3
(d) Infinite

From confusion to clarity

Follow for More!

26 The solution set of the two equations: x + 3 y = 4, 3y + x = 1 in R × R is ....

(a) ∅ (b) {(1 , 1)} (c) $\{(0 , \frac{1}{3})\}$ (d) {(0 , 0)}

27 The two straight lines: x – 3 = 0, y = 4 are intersecting in the .... quadrant.

(a) first (b) second (c) third (d) fourth

28 The number of solutions of the two equations: x + y = 2, y + x = 3 in R × R is ....

(a) 0 (b) 1 (c) 2 (d) 3

29 If the two equations 3x + 2y = 9 , 6x + ky = 18 has infinite number of solutions in R × R, then k = ...

(a) 6 (b) 4 (c) 8 (d) 7

30 If the curve of the quadratic function f touch the x-axis at the point (k + 1 , k – 2) , then k = ...

(a) 0 (b) 1 (c) 2 (d) 3

31 In the equation: $ax^2 + bx + c = 0$ where a ≠ 0. If $b^2 - 4ac = 0$ then number of the equation roots in R = ...

(a) 0 (b) 1 (c) 2 (d) infinite number

32 If the curve of the quadratic function f passes through the points (–1 , 0) , (0 , –4) and (4 , 0), then the solution set of the equation f(x) = 0 in R is ....

(a) {–1 , 0} (b) {–4 , 0} (c) {–1 , 4} (d) {4 , –4}

33 The solution set of the two equations x – y = 0 , xy = 4 in RR is ....

(a) {(2 , 2)} (b) {(–2 , 2)} (c) {(0 , 0)} (d) {(–2 , –2) ,(2 , 2)}

From confusion to clarity

Follow for More!

Q2: Answer The Following

1. Find the values of a and b, noting that: (3, - 1) A solution to the two equations:
$ax + b y = 5$, $3ax + by = 17$

a = 2 b = 1

2. A rectangle whose length exceeds its width by 4 cm, if the perimeter of the rectangle is 28 cm. Find the area of the rectangle.

Area = 45 cm^2

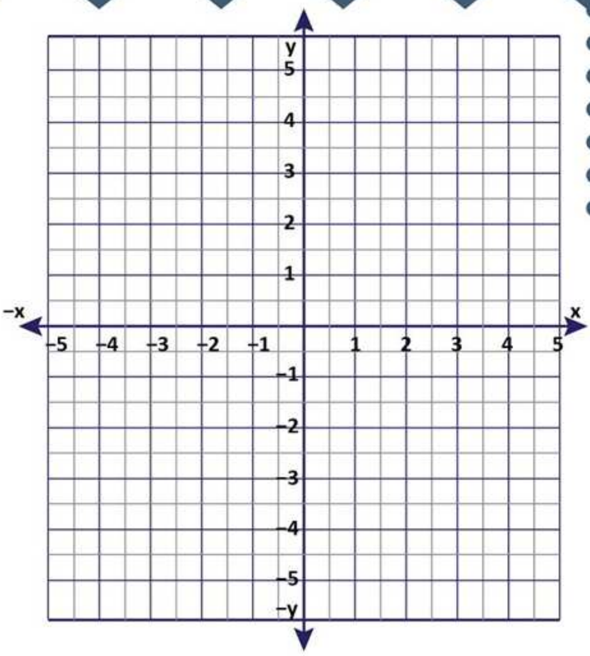
3. Find in R × R the solution set of the following two equations algebraically: $x - y = 0$, $x^2 + xy + y^2 = 27$

{(−3 , −3) ,(3 , 3)}

4. Two acute angles in a right-angled triangle, the difference between their measures is 50°, Find the measure of each angle

The measures of the angles are 70 and 20

5 Graph the function f: $f(x)=x^2-4x+3$ in the interval [–1 , 5] and from the graph, find :



ⓐ The minimum value of the function. -1

ⓑ The equation of the axis of symmetry x = 2

ⓒ The S.S of the equation $f(x) = 0$ S.S = {1,3}

6 Find in R × R the solution set of the following two equations algebraically:

$x - y = 2$, $x^2 + y^2 = 34$

{(–3 , –5) ,(5 , 3)}

7 If the curve of the quadratic function f passes through the points (-1, 0) ,(0, -4) and (4, 0) find the solution set of the equation: $f(x) = 0$

S.S = {–1,3}

8 Find in R the solution set of the following equation using the general rule: $3x^2 + 1 = 6x$ (Approximating the result to one decimal place) .

S.S = {1.8 , 0.2}

9 A right-angled triangle of hypotenuse length 13 cm, and its perimeter is 30 cm. Find the lengths of the other two side

The lengths of the other two sides are 12 cm and 5 cm.

10 Find in R the S.S of equation using the general formula:
$x(x-1) = 4$ in R "to the nearest one decimal place"

S.S = {2.6 , -1.6}

11 Find in R × R the solution set of the two equations: $2x - y = 3$, $x + 2y = 4$

S.S = {(2 , 1)}

12 Find in R×R the solution set of the two equations: $y + 2x = 0$, $xy = 8$

$\emptyset$

13 Find in R the S.S of equation using the general formula: $x^2 - 2x - 6 = 0$ in R "to the nearest one decimal place"

S.S = {3.6 , -1.6}

14 Find in R the solution set of the following equation using the general rule:
$x^2 - 5x = -2$ (Approximating the result to two decimal places)

S.S = {4.56 , 0.44}

15 Two positive real numbers the difference between them is 6 and the product is 16. Find the two numbers

The numbers are 8 and 2

16 A two–digit number its units digit twice the tens digit. If the product of its digits equals half of the original number, what is the number?

The number is 36.

17 Find in R the S.S of equation using the general formula: $x^2 + 3x - 3 = 0$ in R
"to the nearest one decimal place"

S.S = {0.8 , -3.8}

18 Find in R × R the solution set of the following two equations: $x + y = 5$, $x^2 + y^2 = 13$

S.S = {(3 , 2) , (2 , 3)}

19 Two real numbers their sum is 10 and the difference between their squares is 40. Find the two numbers.

The two numbers are 7 and 3.

20 Find in R the S.S of each equation using the general formula: $x^2 - x = 4$ in R "to the nearest one decimal place"

S.S = {2.6 , -1.6}

21 The sum of two real numbers is 9 and the difference between their squares equals 45. Find the two numbers.

The two numbers are 7 and 2.

Q1: Choose the correct answer

1 The set of zeroes of the function f: $f(x) = -3x$ is ....

(a) {0}   (b) {−3}   (c) {−3 , 0}   (d) R

2 The set of zeroes of the function f: $f(x) =$ zero is ....

(a) $\varnothing$ (b) R − {0}   (c) { 0}   (d) R

3 If $z(f) = \{2\}$, $f(x) = x^3 - m$, then m = ...

(a) $\sqrt[3]{2}$ (b) 2   (c) 4   (d) 8

4 The set of zeroes of the function f: $f(x) = \frac{2-x}{7}$ is ....

(a) $\varnothing$ (b) {2}   (c) {2 , 7}   (d) {7}

5 The set of zeroes of the function f: $f(x) = \frac{x^2-9}{x-2}$ is ....

(a) {2}   (b) R − {2}   (c) {3 , −3}   (d) {3 , −3, 2}

6 If x = 3 is one of the zeroes of the function f: $f(x) = \frac{x^2-2x+k}{x^2-25}$, then k = ...

(a) 3   (b) 6   (c) −3   (d) −6

7 The common domain of the two fraction $\frac{2}{x^2-1}$, $\frac{5x}{x^2-x}$ is ....

(a) R − {1}   (b) R − {0 , 1}   (c) R − {0 , 1 , −1}   (d) R − {1 , −1}

8 The common domain of the two fraction $\frac{2x}{x-3}$, $\frac{x}{x+5}$ is ....

(a) {3 , −5}   (b) R − {0 , 3 , −5}   (c) R − {3 , −5}   (d) R

9 The set of zeroes of the function f: $f(x) = x^2 + 1$ is ....

(a) $\varnothing$ (b) {−1}   (c) {−1 , 1}   (d) {0}

From confusion to clarity

Follow for More!

10 The domain of the function f: $f(x) = \frac{x-7}{3(x-3)}$ is ....

(a) R – {–1} (b) R – {3} (c) R – {–1 , 3} (d) R

11 The common domain of the two fraction $\frac{x}{x+1}$, $\frac{x+2}{x^2+4}$ is ....

(a) {–1} (b) {–1 , –4} (c) R – {–1} (d) {–1 , 2 , –2}

12 If $x \neq 0$, then $\frac{5x}{x^2+1} \div \frac{x}{x^2+1}$ = ...

(a) 1 (b) –1 (c) –5 (d) 5

13 If {2} is the set of zeroes of the function f: $f(x) = x^3 - m$, then m = ...

(a) 8 (b) 6 (c) 4 (d) 2

14 If $n(x) = \frac{x}{x^2+9}$, then the domain of n^{-1} is ....

(a) Ø (b) R – {–3 , 3 , 0} (c) R (d) R – {0}

15 If $n(x) = \frac{x^2-2x}{(x-2)(x^2+2)}$, then the domain of n^{-1} is ....

(a) R (b) R – {2} (c) R – {0 , 2} (d) R – {0}

16 The domain of the multiplicative inverse of the algebraic fraction $\frac{x-2}{x^3+27}$ is ....

(a) R – {2} (b) R – {–3 , 2} (c) R – {2 , –3 , 3} (d) R – {–3 , 3}

17 If x ∈ R – {0 , 1} , then $\frac{1-x}{x} \div \frac{x-1}{x}$ in simplest form is ....

(a) 1 (b) –1 (c) x – 1 (d) x

18 If $n_1(x) = \frac{x^2-4}{x-3}$, $n_2(x) = x + 3$, then $n_1 = n_2$ when they have the same domain which is ....

(a) R (b) R – {3} (c) R – {– 3} (d) R – {1}

From confusion to clarity

Follow for More!

19 The algebraic fraction $\frac{1}{x}$ equals the algebraic fraction .... where $x \neq 0$

(a) $\frac{x}{x^2}$ (b) $\frac{1}{x^2}$ (c) $\frac{x}{2}$ (d) $\frac{x+1}{x}$

20 The set of zeroes of the function f where $f(x) = x(x^2 - 2x + 1)$ is ....

(a) {0 , 1} (b) {0 , −1} (c) {0} (d) {1}

21 The additive inverse of the algebraic fraction $\frac{2}{x-1}$ is .... , where $x \neq 0$

(a) $\frac{-2}{x+1}$ (b) $\frac{x-1}{2}$ (c) $\frac{2}{1-x}$ (d) $\frac{-2}{-x+1}$

22 The set of zeroes of the function f: $f(x) = x^2 + 25$ is ....

(a) ∅ (b) {5} (c) {5 , −5} (d) R

23 The set of zeroes of f where $f(x) = \frac{x^2 - 3x + 2}{x - 2}$ is ....

(a) {2} (b) {1} (c) R − {2} (d) {1 , 2}

24 If: 3 is one of the zeros of the function $f(x) = x^2 - 3x + m$, then m is ....

(a) 0 (b) 6 (c) 3 (d) −6

25 The additive inverse of the fraction $\frac{x+1}{x-5}$ is ....

(a) $\frac{x+1}{5-x}$ (b) $\frac{1-x}{x-5}$ (c) $\frac{1-x}{5-x}$ (d) $\frac{1-x}{x+5}$

26 If $n(x) = \frac{1}{(x^2-4)^2}$, then the domain of n^{-1} is ....

(a) R − {1 , 4} (b) R − {2 , −2} (c) R − {1} (d) R

27 If $n(x) = \frac{x-2}{x+1}$, then the domain of n^{-1} is ....

(a) R − {−1} (b) R − {2} (c) R − {1 , −2} (d) R − { −1 , 2}

From confusion to clarity

Follow for More!

Q2: Answer The Following

1 If the set of zeroes of the function f: $f(x) = \dfrac{x^2 - ax + 16}{x + b}$, is {4} and its domain is R – {2}, find the value of each of a and b

a = 8 b = -2

2 Find n(x) in the simplest form, showing the domain of n where:

$n(x) = \dfrac{3x}{x^2 - x - 2} + \dfrac{x - 1}{1 - x^2}$

R – {2, 1 , –1} $n(x) = \dfrac{2}{x - 2}$

3 If $n_1(x) = \dfrac{2x}{2x + 8}$, $n_2(x) = \dfrac{x^2 + 4x}{x^2 + 8x + 16}$, prove that: $n_1 = n_2$

R – {4} $n(x) = \dfrac{x}{x + 4}$

4 If the set of zeroes of the function f: $f(x) = \dfrac{x^2 - ax + 9}{bx + 4}$, is {3} and its domain is R – {2}

Find: the value of each of a and b

a = 6 b = -2

From confusion to clarity

Follow for More!

5 If $n(x) = \frac{x^2 + cx + 12}{x^2 + 3x + a}$, the domain of $n = R - \{3, b\}$, $n(4) = 6$
Find the values of a, b and c

$a = -18$ $b = -6$ $c = 8$

6 Find n (x) in the simplest form, showing the domain of n:
$n(x) = \frac{x^3 - 8}{x^2 + x - 6} \div \frac{x^2 + 2x + 4}{x + 3}$

$R - \{2, -4\}$ $n(x) = 1$

7 Find in the simplest form, showing the domain: $n(x) = \frac{x^3 - 8}{x^2 - 9} \times \frac{x + 3}{x^2 + 2x + 4}$

$R - \{3, -3\}$ $n(x) = \frac{x - 2}{x - 3}$

8 Find n(x) in the simplest form, showing the domain of n where:
$n(x)= \frac{3x - 6}{x^2 - 4} - \frac{9}{2 - x - x^2}$, Find: n(1) if possible.

$R - \{2, -2, 1\}$ $n(x) = \frac{3}{x - 1}$

From confusion to clarity
Follow for More!

9 Find in the simplest form, showing the domain: $n(x) = \frac{x^2 + 2x + 4}{x^3 - 8} + \frac{x^2 - 2x - 3}{x^2 - 5x + 6}$

$R - \{3, 2\}$ $n(x) = \frac{x + 2}{x - 2}$

10 Find n(x) in the simplest form, showing the domain where:

$n(x)= \frac{x^2 - 4}{x^2 - 5x + 6} - \frac{5}{x - 3}$

$R - \{3, 2\}$ $n(x) = 1$

11 Find n (x) in its simplest form, showing the domain of n where :

$n(x) = \frac{x^2 + 2x}{x^3 - 27} \div \frac{x + 2}{x^2 + 3x + 9}$

$R - \{3, -2\}$ $n(x) = \frac{x}{x - 3}$

12 If f: $f(x) = \frac{x^2 + k}{x^2 - mx + 6}$, its domain is R – { 2 , 3} , $f(4) = 9$,

Find: m, k

$m = 5$ $k = 2$

13 If the domain of $n(x) = \frac{b}{x} + \frac{9}{x + a}$, $R - \{0 , 4\}$, $n(5) = 2$.

Find the value of a and b

$a = -4$ $b = -35$

14 If $n(x) = \frac{x^2 - 5x}{x^2 - 6x + 5}$, find n_1 (x) in the simplest form, showing the domain of n^{-1}

$R - \{0, 1, 5\}$ $n(x) = \frac{x}{x - 1}$

15 Find n (x) in the simplest form, showing the domain of n :

$$n(x) = \frac{2x + 6}{x^2 + x - 6} - \frac{x^2 - 6x}{x^2 - 8x + 12}$$

$R - \{-3, 2, 6\}$ $n(x) = -1$

16 Find in the simplest form, showing the domain: $n(x) = \frac{x^2 - x - 6}{x^2 - 4} \times \frac{x^2 - 2x}{x - 3}$

$R - \{-2, 2, 3\}$ $n(x) = x$

17 If $n_1(x) = \frac{x^2 - 4}{x^2 + x - 6}$, $n_2(x) = \frac{x^2 - x - 6}{x^2 - 9}$ are $n_1 = n_2$ or not why?

No, because their domains are different

18 If the domain of the function n where $n(x) = \frac{x - 1}{x^2 - ax + 9}$ is R – {3} find the value of a

a = 6

19 If $n(x) = \frac{x + 2}{x^2 - x - 6}$, find $n^{-1}(x)$ in the simplest form showing its domain.

Find: $n^{-1}(x) = 2$, what is the value of x

R – {3, –2} $n^{-1}(x) = x - 3$ x = 5

20 Find n(x) in the simplest form, showing the domain of n where:

$n(x) = \frac{x - 3}{x^2 - 7x + 12} - \frac{x - 3}{3 - x}$

R – {3, 4} $n(x) = \frac{x - 3}{x - 4}$

21 Find in the simplest form, showing the domain: $n(x) = \frac{x^2 - 12x + 36}{x^2 - 6x} \times \frac{4x + 24}{x^2 - 36}$

$R - \{0, 6, -6\}$ $n(x) = \frac{4}{x}$

22 Find in the simplest form, showing the domain: $n(x) = \frac{x^2 - 3x + 2}{x^2 - 1} \div \frac{3x - 15}{x^2 - 6x + 5}$

$R - \{1, -1, 5\}$ $n(x) = \frac{(x - 3)(x - 1)}{3(x + 1)}$

23 If $n(x) = \frac{x^2 + 4x + 3}{x^3 + 27}$, find $n^{-1}(x)$ in the simplest form showing its domain.

$R - \{-3, -1\}$ $n^{-1}(x) = \frac{x^2 - 3x + 9}{x + 1}$

Q1: Choose the correct answer

1) If A , B are two mutually exclusive events from the sample space of a random experiment, then P (A ∩ B) = ...

(a) zero (b) 1 (c) $\frac{1}{2}$ (d) −1

2) If P(A) = 4 P(A`), then P(A) = ...

(a) 0.6 (b) 0.4 (c) 0.2 (d) 0.8

3) If A ⊂ B, then P(A ∪ B) = ...

(a) P(A) (b) P(B) (c) 1 (d) P(A∩B)

4) If A and B are two mutually exclusive events of a sample space of a random experiment, then P(A − B) = ...

(a) P(A) (b) P(B) (c) P(A`) (d) P(B`)

5) The probability of the certain event equals ....

(a) zero (b) 1 (c) $\frac{1}{2}$ (d) Ø

6) If A and B are two events from the sample space of a random experiment , P (A) = 0.6 and P (A ∩ B) = 0.4 , then P (A − B) = ...

(a) 0.6 (b) 0.4 (c) 0.2 (d) 0.1

7) If A is an event of the sample space (S) of a random experiment and P (A`) = P (A), then P (A) = ...

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) 1

8 In an experiment of throwing a fair die once, the probability of appearing a prime number is ....

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) $\frac{3}{4}$

9 The probability of the impossible event is ....

(a) zero (b) 1 (c) $\frac{1}{2}$ (d) Ø

10 If a fair die is rolled once , then the probability of appearing a number less than or equal 3 equals ....

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) $\frac{1}{6}$

11 If A and B are two events of a sample space S, $A \subset B$, then $P(A \cup B)$ = ...

(a) P(A) (b) P(B) (c) $P(A \cap B)$ (d) 0

12 If $\grave{A}$ is the complementary event of A in the sample space of a random experiment, Then $P(\grave{A} \cup A)$ = ...

(a) S (b) 1 (c) $\frac{1}{2}$ (d) Ø

13 If the probability of the failure of a student is 0.2, then the probability of his success is ....

(a) 8 (b) 1 (c) $\frac{1}{5}$ (d) $\frac{4}{5}$

14 If $A \subset B$, then $P(A - B)$ = ...

(a) P(A) (b) P(B) (c) zero (d) 1

15 If $A \subset S$ of a random experiment and $P(\grave{A}) = 2P(A)$, then P (A) = ...

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) 1

16 If A is an event from the sample space of a random experiment, then $P(\grave{A})$ = ...

ⓐ $P(A) - 1$ **ⓑ $1 - P(A)$** ⓒ -1 ⓓ 1

17 If $A \subset B$, then $P(A \cap B)$ = ...

ⓐ $P(A)$ ⓑ $P(B)$ ⓒ zero ⓓ $\emptyset$

18 If A is an event from the sample space of a random experiment, and $P(A) = P(A^{\prime})$, then $P(A)$ = ...

ⓐ 1 ⓑ 0.25 **ⓒ 0.5** ⓓ 2

19 If A is an event from the sample space of a random experiment, and $P(A) = 3P(A^{\prime})$, then $P(A)$ = ...

ⓐ $\frac{1}{4}$ **ⓑ $\frac{3}{4}$** ⓒ $\frac{1}{2}$ ⓓ 1

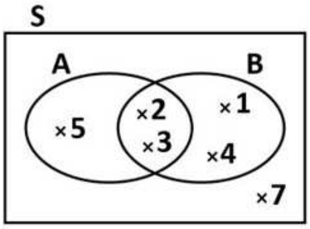


Q2: Answer The Following

1 If A , B are two events of the sample space of a random experiment and
P (A) = 0.3 ,P(B) = P(B`), P (A ∩ B) = 0.2

Find: (a) P (A ∪ B) 0.6 (b) P (A − B) 0.1

2 If the opposite figure represents the two events A and B in the sample space (S) of a random experiment, Find:



(a) P (A ∩ B) $\frac{1}{3}$ (b) P (A ∪ B) $\frac{5}{6}$
(c) P (A − B) $\frac{1}{6}$

3 If A , B are two events in the sample space of a random experiment:
P(A) = 0.4, P(B) = 0.7, P (A ∪ B) = 0.8

Find: (a) P (A ∩ B) 0.3 (b) P (A − B) 0.1

4 If A , B are two events of the sample space of a random experiment
,P(A)= 0.8, P(B) = 0.7, P(A ∩ B)= 0.6

Find: (a) P (A ∪ B) 0.9 (b) The probability of non occurrence of A 0.2

5 If A , B are two events of the sample space of a random experiment and $P(A) = \frac{1}{2}$, $P(B) = \frac{1}{3}$, Find $P(A \cup B)$ in each of the following two cases:

(a) If $P(A \cap B) = \frac{1}{8}$ $\frac{17}{24}$

(b) If A and B are two mutually exclusive events. $\frac{5}{6}$

6 A bag contains 20 identical cards numbered from 1 to 20. A card is randomly drawn. Find the probability that the number on the drawn card is :

(a) divisible by 3 $\frac{3}{10}$

(b) divisible by 3 or 5 $\frac{9}{20}$

7 If A and B are two events of the sample space of a random experiment ,$P(A) = 0.3$, $P(B) = 0.6$, Find $P(A \cup B)$ in each of the following cases:

(a) A and B are mutually exclusive events 0.9

(b) $P(A \cap B) = 0.2$ 0.7

8 If A and B are two events of the sample space of a random experiment ,$P(B) = \frac{1}{3}$, $P(A - B) = \frac{1}{4}$, Find P (A) if:

(a) $P(A \cap B) = \frac{1}{12}$ $\frac{1}{3}$

(b) $B \subset A$ $\frac{7}{12}$

9 If A and B are two events from the sample space of a random experiment , P (A) = 0.5, P (A ∪ B) = 0.8 and P (B) = 2x, then calculate the value of x if :

(a) A ⊂ C
0.4

(b) P (A ∩ B) = 0.1
0.2

10 A bag contains 20 identical cards numbered from 1 to 20. One card is drawn randomly. Find the probability that the number on the drawn card:

(a) Is divisible by 5
$\frac{1}{5}$

(b) Is odd and divisible by 5
$\frac{1}{10}$

11 If A and B are mutually exclusive events in the sample space of a random experiment and: P(A) = 0.3, P(B) = 0.4, find: P(A ∪ B) , P(A − B) .
0.7 0.3

AHMED NASSR

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